Earth Systems
Environmental Engineering

September 27, 2021

Via Email/Sharefile

Mr. Sam Abdellatif
Land and Redevelopment Programs Branch
US Environmental Protection Agency Region 2
290 Broadway, 25th Floor
New York, New York 10007-1866

Re: Revised Proposed Future Solar Field Project Area RIW Comment Letter Response – July 28, 2021
Hess Corporation Former Port Reading Complex (HC-PR)
750 Cliff Road
Woodbridge, Middlesex County, New Jersey
NJDEP PI# 006148
ISRA Case No. E20130449
EPA ID No. NJD045445483

Dear Mr. Abdellatif:

Earth Systems, Inc. (Earth Systems) has prepared this letter on behalf of Hess Corporation (Hess) regarding the July 28, 2021 comment letter provided by the New Jersey Department of Environmental Protection (NJDEP) and Environmental Protection Agency (EPA) relating to the above referenced report. Please note that a meeting was held on August 16, 2021 between Hess, Earth Systems, and NJDEP to discuss this comment letter.

Although the July 28, 2021 comment letter references the May 14, 2021 version of the RIW, upon reviewing the comments, it became clear that this letter included comments pertaining to previous (rescinded) versions of the RIW. Additionally, on the day of the August 16 meeting, the NJDEP provided additional comments. Those comments are incorporated into this letter, clarifying some of their original comments that pertained to a rescinded version of the RIW.

As directed by the NJDEP and EPA, this RIW is limited to the footprint of the "Proposed Future Solar Field Project Area" (hereinafter "Project Area"). Even though Buckeye no longer plans to move forward with the proposed solar project, Hess/Earth Systems still intends to move forward with the proposed Remedial Investigation (RI) activities.

The NJDEP July 28, 2021 comment letter consisted of 22 comments (not including sub-comments) for the above referenced Workplan. The following is a brief summary of the substance of the comments that were included in the comment letter (comments that directly pertain to the specified Workplan are color coded as **green**). Responses were provided to all NJDEP comments, even if they did not directly pertain to the specified RIW.

- Adjacent Area (Area of the Site not included in the RIW) – 2 comments
- Pre-Clearing – 2 comments that have been addressed and resolved in the Quarterly meetings.
- Colonial Pipeline – 1 comment
- Comments pertaining to previously rescinded versions of the workplan and were addressed in the final RIW submittal – 4 comments
- Comments pertaining to overall Site issues such as sitewide ecological investigations, historic fill, or AOCs not related to this specified RIW – 3 comments
- Generic comments regarding incorporating all NJDEP comments into future workplans – 1 comment
- Comments addressing termination of solar project – 1 comment
- **Comments directly pertaining to the referenced Workplan**
    - **Figure Labels – 1 comment**
    - **Tidal Stage – 1 comment**
    - **Sample Depths/Sample Justification/Sample Clarification – 3 comments**
- Observations/Recommendations not requiring a response – 3 comments

NJDEP Comments & Earth Systems/Hess Responses

NJDEP Comment 1 - Response 5, Response 6, Response 8 and subsequent bullets, Response 10: The response language used regarding ecological work is not consistent with prior approved language from the agencies. A suggested response is: "Future ecological evaluations will be conducted pursuant to the ecological language contained in the workplan, EPA's letter dated June 23, 2021, and the Departments letter dated June 4, 2021." Please confirm that Hess plans on adhering to the ecological language previously discussed.

Hess/Earth Systems Response 1: On April 30, 2021, the NJDEP project team provided ecological language for inclusion in remedial investigation workplans. Hess/Earth Systems included that exact language (see below) in the RIW's Introduction (Section 1,

Page 2) as well as all other workplans that have been submitted since May 2021. Unless directed otherwise, Hess will continue to include the previously approved language.

"In addition, an Ecological Receptors Remedial Investigation Report (Ecological RIR), which includes results of contaminant delineation in environmentally sensitive natural resources (ESNRs) and an Ecological Risk Assessment pursuant to N.J.A.C.7:26E-4.8 and in accordance with the Ecological Evaluation Technical Guidance, will be provided for each AOC grouping where impacts are identified. The Ecological RIRs shall be incorporated into the final Remedial Investigation Reports (RIRs) for each AOC grouping. Data for all media pertaining to the AOC group specified in this RIW will be incorporated into this Ecological RIR, as applicable."

NJDEP Comment 2 - Response 6, bullet 6: Tidal stage recording during sampling was identified; The Department requested clarification of the tidal stage measurement location (e.g., stilling well on the Arthur Kill? North Ditch?), and that a tidal influence evaluation of the area would be needed. Does the QAPP include either or both of these elements?

Hess/Earth Systems Response 2: As was explained by the Hess team during the August 16, 2021 meeting, Hess/Earth Systems' procedure will be to collect groundwater samples from monitoring wells in close proximity to the bulkhead at low tide. In addition, after a baseline round of groundwater sampling is conducted, level trolls will be placed in all FA wells to determine water levels over a 1-2 week period of time. If there is any indication of fluctuating water levels due to a tidal influence, Earth Systems will collect additional groundwater samples at various tidal stages, as necessary.

Please note that a tidal study was conducted at the Site and is discussed in the Conceptual Site Model (CSM) submitted for regulatory review in March 2021. The interaction of tidal influence and groundwater elevations will be monitored, however the tide study identified "the maximum tide cycle in the monitoring wells (near the North Drainage Ditch) was less than 0.2 feet at a distance less than 75-fet from the ditch indicating a highly dampened tidal influence."

NJDEP Comment 3 - Response 7: The Colonial pipeline location will need to be confirmed during the RI and shown on RIR figures with well locations. Pipeline construction information (e.g., invert depth and pipe diameter) will need to be provided in the RIR and considered with well completion intervals, water quality data, and tidal influence study.

Hess/Earth Systems Response 3: As explained during the August 16, 2021 meeting, it was Hess/Earth Systems' intention to confirm the location of the Colonial pipeline as part of implementation of the proposed RI activities. All known pipeline details will be evaluated concurrently with well construction, groundwater elevations, and analytical results.

Please note the currently available information regarding the Site pipelines re described in the CSM submitted for regulatory review in March 2021 (See Section 1.3.3 and Figure 2).

NJDEP Comment 4 - Response 12, bullet 6: The Department does not find that the tanker area will be fully investigated by the proposed sampling plan based on flow conditions and proposed well locations. If not included in this RIW as part of AOC 103 or as a new AOC, additional investigation will be needed under the site RI.

Hess/Earth Systems Response 4: As discussed during the August 16, 2021 meeting, Hess/Earth Systems acknowledge that there are containers present in the 1969-1970 aerials, located to the west of the footprint of the Project Area. This area is located outside the boundaries of the area addressed in this RIW and will be addressed separately at a later date.

Please note that there is no current documentation that identifying the contents, if any, of the observed containers. Hess therefore intends that analytical results for this area will capture all constituents potentially relevant to operations in this area, including PFAS.

NJDEP Comment 5 - Response 16: Boring and borehole pre-clearing continues to be an issue for the evaluation of site impacts, particularly for VOCs. The least disruptive methods and depths are requested, but will always qualify, to some degree, VOC sample results and evaluation of compliance with the Remediation Standards.

Hess/Earth Systems Response 5: As discussed during the August 16, 2021 meeting, Hess/Earth Systems explained that pre-clearing is conducted due to safety reasons. To help ensure the safety of personnel involved, Hess/Earth Systems will continue to pre-clear as explained during quarterly meetings and outlined in Section 3.2 of the RIW (relevant report section included below). To minimize potential volatilization, Hess/Earth Systems will utilize a hand auger, and not an air knife, when collecting a soil sample in the top 6-foot interval. In addition, if soil lithology information is needed for an area, a hand auger is also utilized. Finally, if a monitoring well is installed utilizing an air knife, an additional two weeks of stabilization time is allowed prior to collecting a groundwater sample.

> *Section 3.2:*
>
> *As per the NJDEP Field Sampling Procedures Manual (FSPM), soil samples collected for Volatile Organic Compound (VOC) analysis must be collected from an intact core to minimize potential volatilization of the sample. In accordance with Hess and Buckeye safety protocols, all soil borings must use 'soft digging' techniques from the surface to 6 or 8 feet below grade, depending on the location of the boring in relation to piping runs or tanks. 'Soft digging' techniques include the use of a hand auger and/or an air knife. Therefore, all soil samples collected from the surface to 6 (or 8) feet below grade will be collected utilizing a hand auger.*
>
> *Analytical results obtained from soil samples collected in this interval will be qualified as being potentially biased low. The analytical results will be evaluated in conjunction with multiple lines of evidence in order to gain a full understanding of subsurface conditions to ensure that qualified analytical results are representative of potential VOC soil impacts. The multiple lines of evidence include:*

- *Direct reading instruments*
- *Observations of odor and color*
- *Staining*
- *Changes in lithology*
- *Soil properties that affect contaminant migration*
- *Physical and chemical nature of the contaminant*
- *Groundwater quality in the area*

In addition, any monitoring wells that are installed utilizing an air knife as part of pre-clearing will be allowed an additional two (2) weeks to stabilize prior to sample collection (for a total of 4 weeks from installation to sampling).

The Licensed Site Remediation Professional (LSRP) of record for the Site has determined that the soil sample collection technique described above will achieve the objectives of the remedial investigation and result in sufficient usable data to design a remedial strategy.

NJDEP Comment 6 - Sampling Depths Proposals for Investigation Borings, Various AOCs, Section 6.1, Response to Comment 23: The proposed sample depths for the Investigation Borings in various AOCs are still unclear. Are the depths listed in the tables for Investigation Borings the total depth of the boring or the proposed sampling interval? Will multiple samples be collected per boring? Will the actual sample interval(s) be selected based on field indicators? How many samples for analyses will be collected from each Investigation Boring?

Hess/Earth Systems Response 6: See responses to specific bullet items below.

- **AOC 102, page 27:** Although some of the above questions seem to be answered, based on the following language: "Soil samples will be collected from the surface (0 to 2-feet below grade) and from intervals that exhibit any field indications of potential impacts.", please clarify and respond to the above questions.

  - As explained in Section 6.0 of the RIW, soil samples will be collected at multiple depths (see excerpt for Section 6.0 below). Seven (7) soil borings are proposed for additional characterization purposes, horizontal delineation, and vertical delineation. One soil sample will be collected from each of the seven (7) proposed borings from the top 2 feet to further characterize surface soil for AOC 102. Additional soil samples will be collected from each soil boring at any depths that exhibit field indications of impacts. Finally, additional soil samples will be collected for horizontal and vertical delineation purposes from depths determined by historic soil sampling depths.

Section 6.0, AOC 102:

In addition to collecting additional data for assessment

purposes, vertical and horizontal delineation is also required for PCBs and metals detected in SI soil sample VLLD-SS-3. Total chromium was detected at a concentration above 20 ppm in several soil samples. Therefore, seven (7) soil borings are proposed to assess potential soil impacts for AOC 102 and to delineate any impacts detected during the SI. Soil samples will be collected from the surface (0 to 2-feet below grade) and from intervals that exhibit any field indications of potential impacts. Soil samples being collected for horizontal delineation purposes will be collected at the same depth as historic soil sample depths.

- **AOC 91:** There is no rationale for sample depth selection other than "Soil samples will be collected based on field observations". Please provide a rationale for the sampling depth selections.

    - No previous soil sampling has been conducted for AOC 91. Therefore, five (5) soil borings are proposed to be installed to a depth of 10-feet below grade. Since there is no historic information regarding soil conditions in this area, it is a commonly accepted best practice approach to collect soil samples at depths biased towards intervals of potential impacts based on field observations. In addition, soil samples will also be collected from all five (5) borings from the top 2-feet, to characterize surface soil in the area. If there are no field indications of impacts observed in the soil borings, in addition to the shallow soil sample, a soil sample will also be collected from the 6-inch interval above the observed groundwater table. This sampling approach is considered a best practice approach.

NJDEP Additional General Comments 7: The Department previously commented on various documents including the PA/ SI from 2015. Hess response often included that those comments will be addressed in future workplans. The Departments review of this document and future documents is and will be conducted under the premise that prior comments will be applied to future submittals where applicable. Hess should ensure prior comments, where applicable, are applied appropriately to each workplan.

Hess/Earth Systems Response 7: Hess/Earth Systems acknowledges that they will continue to implement approaches based on agreed upon prior comments, and where applicable, are applied appropriately to each workplan.

NJDEP Additional General Comment 8: If using a site feature as a location identifier on a figure, please label the feature so that the Department can find the specific location and be properly oriented. (i.e., North Ditch should be labeled if using as a location identifier).

Hess/Earth Systems Response 8: Site features are generally always identified. However, when a portion of the Site is "magnified" for a specific map, it is possible that while the location identifier remains on the map, it does not always carry over to the "magnified" view. Hess/Earth Systems will review all "magnified" figures and identify all

major features on these maps. Additionally, as requested by the NJDEP project team, Hess / Earth systems will print out copies of all maps and tables and provide them to the NJDEP case team. All of these figures and tables will continue to be provided electronically in the reports, workplans, etc.; however, these extra copies are being provided at NJDEP request.

NJDEP Additional General Comments 9: Clarify if all soil boring and well locations will be pre-cleared. The Department notes that this may interfere with the assessment of near surface VOC field screening and soil/temporary well sample results.

Hess/Earth Systems Response 9: Pre-clearing has been addressed during quarterly meetings as well as clarified above in Hess/Earth Systems Response 5.

(Hess/Earth Systems Response 5: As discussed during the August 16, 2021 meeting, Hess/Earth Systems explained that pre-clearing is conducted due to safety reasons. Hess/Earth Systems will continue to pre-clear as explained in Section 3.2 of the RIW. Hess/Earth Systems utilize a hand auger, and not an air knife, when collecting a soil sample in the top 6-foot interval. In addition, if soil lithology information is needed for an area, a hand auger is also utilized. Finally, if a monitoring well is installed utilizing an air knife, an additional two weeks of stabilization time is allowed prior to collecting a groundwater sample).

NJDEP Additional General Comments 10: The workplan does not provide a full description of historic and Hess ownership property uses (AOC 17, AOC 63 and AOC 102). Records of material transfers to these areas from on-site or off-site, types and sources of materials being stored in AOC 63 and 102, etc., were not described. Refineries generate various waste streams that may have been deposited in either of these filled areas and prior to changes in regulations concerning these materials (e.g., catalyst fines, catalyst beads, possibly dimersol materials, etc.). If this cannot be affirmatively determined, the assumption may need to be that Hess did use these areas for refining waste materials management if they were not precluded during all of Hess ownership.

Hess/Earth Systems Response 10: Earth Systems/Hess has provided all known information regarding the historic use of the above specified AOCs. Since these areas were historically potentially used for equipment and/or material storage – a SI was completed in these areas and submitted to the NJDEP and EPA in November 2015. Based on the SI data, additional RI activities were proposed. The RI activities proposed will sufficiently characterize any potential historic impacts in these areas, regardless of how these areas may have been historically utilized.

NJDEP Additional General Comments 11: The RIW provides the AOC 63 and AOC 102 SIR sampling data. The plan acknowledges 1986 aerial photo features in AOC 102 and has included additional sample locations in some of the apparent materials storage areas. However, no sampling has been proposed in the following areas: a portion of the solar field area between the pipeline easement and the North Ditch, across significant portions of AOC 102 south of AOC 63, with upland drainage paths to wetland and wetland buffer areas, the western portion of AOC 63 appears to have some types of

storage uses, and all AOC 102 materials storage areas have not been included in the sampling plan. Adequate justification must be provided for why these areas are not being sampled or they should be included in the sampling plan.

Hess/Earth Systems Response 11: As discussed during the August 16, 2021 meeting and in the RIW, adequate justification has been included in the workplan regarding sampling methodology.

> *Section 4.1, Page 8*
>
> *"The sampling frequency utilized during the SI is consistent with the NJDEP guidance document: 2015 Technical Guidance for Site Investigation of Soil, Remedial Investigation of Soil, and Remedial Action Verification Sampling for Soil. As per Section 3.6.11, soil samples should be biased towards suspected areas of contamination and if there is no basis for biasing samples then the area should be sampled from random locations at a frequency of at least one sample for every two acres for areas less than 10 acres. AOC 63 is approximately 8 acres; therefore, the collection of thirty (30) soil samples during the SI was more than adequate to identify any potential impacts in this area. In addition, a review of historic aerials, maps, and available documentation was reviewed to determine if there were any historic operations located in this area. Based on this review, there is no indication that any operations were conducted in this area or that any production related waste was ever staged in this area."*

NJDEP Additional General Comments 12: The Department understands that the solar field project has been terminated. However, if solar panel footings are going to be installed through the shallow water table to a deeper unit, ground water characterization and drilling provisions need to be identified to preclude creating a preferential pathway for any contaminant migration between water bearing units.

Hess/Earth Systems Response 12: As previously discussed during the Q2 meeting and subsequently confirmed by Buckeye's during the bi-weekly meetings with Hess, NJDEP and EPA; the solar project is terminated.

NJDEP Additional General Comments 13: The Department notes that the following comments should be applied to future ecological investigations and does not need to be addressed in this document. For future ecological investigation actions, no soil or sediment sampling has been proposed within any of the wetland or wetland buffer areas. Only sampling of surface water/sediment in the Arthur Kill has been identified and no locations are included in the AOC 104 North Ditch.

Hess/Earth Systems Response 13: As explained in the August 16, 2021 meeting, no surface water/sediment sampling was proposed in the report that is being reviewed in this comment letter. A previous version of the report, which the NJDEP directed the Hess team to rescind, contained the recommended ecological sampling as part of the investigation of the Marine Loading Dock Area. However, as directed by the NJDEP, the Marine Loading Dock Area and Project Area were split into two separate RIWs. This

comment pertains to the rescinded version of the report, not the report currently in for review.

a. Soil sampling in the transition and wetland area should be included in the plan to help characterize upland contaminant migration.

   - Wetland sampling is proposed in the AOC 12 – Smith Creek and Detention Basin RIW, submitted on July 30, 2021, and not this specific workplan.

b. None of the SI soil samples in AOC 63 and 102 included surface soil sample intervals. This is a concern with respect to surface erosion to ecological receptors and direct contact/inhalation pathways.

   - This statement is incorrect, as explained in the report. (Section 4.1, Page 8, and Section 6.0, page 27)

> *Section 4.1:*
>
> *In August 2014, thirty-one (31) soil borings (VLRR-SS1 through VLRR-SS-31) were installed to investigate potential soil impacts for AOC 63 – Former Rail Lines (Vacant Land North). Soil samples were collected from each boring and analyzed for BNs, polychlorinated biphenyls (PCBs), and metals. Of the thirty (30) soil samples that were analyzed for BNs, PCBs, and metals**; four (4) of those soil samples were collected from the surface interval (between 0 to 2-feet below grade)** and twenty-six samples (26) samples were collected from the subsurface interval (between 2.5 and 7-feet below grade).*
>
> *Section 6.1:*
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> *As explained in Section 4.2, the appropriate sampling methodology for this type of AOC is to collect at least one sample for every two acres for areas less than 10 acres. AOC 102 is approximately 14-acres; therefore, approximately seven (7) soil samples should have been collected during the SI phase. However, only three (3) soil samples were collected during the SI. Therefore, additional soil sampling is recommended for this AOC. Based on a review of historic aerial photographs, soil borings are biased towards locations that appear to be disturbed or areas that were historically used for equipment storage.*
>
> *In addition to collecting additional data for assessment purposes, vertical and horizontal delineation is also required for PCBs and metals detected in SI soil sample VLLD-SS-3. Total chromium was detected at a concentration above 20 ppm in several soil samples. Therefore, seven (7) soil borings are proposed to assess potential soil impacts for AOC 102 and to delineate any impacts detected during the SI. **Soil samples will be collected from the surface (0 to 2-feet below grade)** and from intervals that*

exhibit any field indications of potential impacts. Soil samples being collected for horizontal delineation purposes will be collected at the same depth as historic soil sample depths.

c. It is not confirmed if ground water migration is or is not a pathway for contaminant migration to wetlands or surface water.

- Potential groundwater migration will be evaluated once the AOC 12 RI wetland sampling is completed. However, that evaluation is not part of this current workplan.

Additional Specific Comments:

NJDEP Comment 14: - Page 17, Historic Fill, BNs and Metals: The language used regarding historic fill is not consistent with prior discussed and approved language from the agencies. Hess stated "Various BN and metals were detected in multiple soil samples. These compounds are most likely attributable to the presence of historic fill. Regardless of the source of these impacts, the final remedial strategy to address these impacts will include the use of institutional and engineering controls. Therefore, additional soil investigation is recommended to collect sufficient analytical data to support the final remedial strategy.".

Although Hess stated that historic fill is "most likely attributable to the presence of historic fill", Hess must demonstrate the presence of historic fill through a historic fill evaluation pursuant to NJAC 7:26E.

The Department suggests including the following language in the workplan: "A historic fill evaluation will be submitted to the agencies pursuant to NJAC 7:26E to confirm the presence of historic fill."

Hess/Earth Systems Response 14: Hess/Earth Systems will include the requested language in future RIW reports. Also, please note that the presence of historic fill is discussed in more detail in the CSM (Section 1.3.5 Site Specific Geology) submitted in March 2021.

NJDEP Comment 15 - AOC 63 and AOC 102: These AOCs are north of the North Ditch; No ground water sampling was conducted in these AOCs in the SIR or proposed in the revised RIW. A ground water investigation may be needed based on the boring observations and/or sample results. Hess is reminded that the May 2021 amendments to the Remediation Standards includes standards to evaluate the Migration to Ground Water pathway.

Hess/Earth Systems Response 15: We recognize the potential need for a groundwater investigation in AOCs 63 and 102 if analytical data and/or boring

observations indicate a need to do so.

NJDEP Comment 16 - AOC 85 Marine VRU: The MRVU wells need to reflect the MRVU-SS-6 location that had the highest PID readings of many borings. Show the SIR location of this boring with the proposed monitor wells. Based on the scale of the drawing, the well locations are some distance from the boring. The investigation needs to quantify the magnitude of a source at the source.

(Revised Comment 16 – Provided 8/16/2021) AOC 85 Marine VRU:

- The revised RIW **DID** move the MRVU-2 monitor well to the MRVU-SS-6 location.

Hess/Earth Systems Response 16: This does not appear to be a question, but a statement of acknowledgement by the NJDEP. As referenced above in the revised comment, the location of monitoring well MRVU-2 was moved to line up with historic boring location MRVU-SS-6 (See Figure 9).

NJDEP Comment 17 - AOC 91 North Dock Yard: The 1972 aerial photo included an area that may have been a fire pit area. No soil borings or monitor wells are proposed within the limits of this feature. All borings are at perimeter locations, with one central location. The location of FA-13 does not adequately investigate PFAS contamination within this area. Future construction may make this area inaccessible, and a monitor well may be required within the aerial photo feature for PFAS sampling.

(Revised Comment 17 – Provided 8/16/2021) AOC 91 North Dock Yard:

- FA-13 was moved to be within a portion of the 1972 aerial photo feature (see revised Solar Field RIW Fig 9-1972, 4-15-21)

Hess/Earth Systems Response 17: This does not appear to be a question, but a statement of acknowledgement by the NJDEP. As referenced above in the revised comment, the location of monitoring well FA-13 was moved based on previous NJDEP comments (See Figure 9).

NJDEP Comment 18 - AOC 100 Storage Area and AOC 103 Fire Pit/Training Area: Figure 9b provides proposed soil borings for LNAPL delineation at FA-3 and FA-5. Figure 9c provides proposed soil borings for PFAS delineation around monitor wells FA-1, FA-4, FA-6 and FA-7. Figure 10 provides monitor well locations for the PFAS area (FA-8 through FA- 20).

The Department is specifically concerned with the movement of a monitor well that had been included in the 1963 aerial photo fire pit location, and the absence of investigation in the area outside of FA-7. The Department notes that Hess must review and apply the comments provided in the August 2020 PowerPoint submittal, comment letter dated November 20, 2020, and conditional approval letter dated March 24, 2021.

a. The new soil borings and monitor well locations need to be shown with the

proposed monitor well locations/numbers in the August 2020 submittal that the department reviewed and commented on in November 2020.

b. Borings and wells need to be shown on each aerial photo as was previously provided.

(**Revised comment 18a/b – Provided on 8/16/2021**) - Addressed by the revised RIW – new soil borings and monitor wells are shown with the aerial photo features. NOTE: The soil borings around FA-3 were omitted from the Figure 9 aerials.

- This does not appear to be a question, but a statement of acknowledgement by the NJDEP. As referenced in the above comment, the revised RIW addressed previous NJDEP comments. A revised version of the Figure 9 aerials has been included with this letter.

c. A monitor well is required at the 1963 fire pit feature. It looks like former FA-15 at this location was moved.

(**Revised comment 18c** – **Provided on 8/16/2021**) - Addressed by the revised RIW – FA-14 is within the 1963 aerial photo feature

- This does not appear to be a question, but a statement of acknowledgement by the NJDEP. As referenced in the above comment, the revised RIW addressed previous NJDEP comments.

d. Explain why PFAS soil boring sampling is not included at FA-2, FA-3, and FA-5?

(**Revised comment 18d** – **Provided on 8/16/2021**) - Addressed by the revised RIW - Explained due to much lower total PFAS concentrations in ground water at FA-2, 3, 5

- This does not appear to be a question, but a statement of acknowledgement by the NJDEP. As referenced in the above comment, the revised RIW addressed previous NJDEP comments.

e. Investigation in the area near FA-7 is required. No samples appear to be in this area as indicated would be the case in the March 2021 response to the departments November 2020 comments on the August 2020 fire training area submittal.

(**Revised comment 18e** – **Provided on 8/16/2021**) - Addressed by the revised RIW – FA-21 is located within the aerial photo area near FA-7

- This does not appear to be a question, but a statement of acknowledgement by the NJDEP. As referenced in the above comment, the revised RIW addressed previous NJDEP comments.

f. Since Hess stated fire training materials were stored in the fire training area, and the 1969 and 1970 aerial photos shows apparent tankers in the fire pit training area, this area needs to be included in the investigation. Again, all soil boring and well locations need to be shown on all aerial photos since features changed over time.

- Please see response above to this comment (Hess/Earth Systems Response 4). As discussed during the August 16, 2021 meeting, Hess/Earth Systems acknowledge that there are containers present in the 1969-1970 aerials, located to the west outside of the footprint of the Project Area. This area is located outside the boundaries of the area addressed in this RIW and will be addressed in a separate report at a later date.

  Please note that there is no current documentation that identifying the contents, if any, of the observed containers. Hess therefore intends that analytical results for this area will capture all constituents potentially relevant to operations in this area, including PFAS.

g. The RIW sample location figures must include the Colonial Pipeline location. The pipeline location appears to have been confirmed by Buckeye and differs from previous Hess submittals. It is not included on sample location figures.

- Hess will perform field investigations to ground truth the Colonial Pipeline location. Once verified during the RI, the Colonial Pipeline location will be included on all sample location figures in the RIR.

h. No other screening soil borings/sample locations are shown in the area between AOC 100 and AOC 103 for characterization - screening purposes. Adequate justification must be provided for not proposing samples in this area or the area should be sampled.

- As explained in Section 6.3 of the RIW, additional investigation in this area will be conducted, if warranted, based on an evaluation of the proposed RIW analytical results and field observations. Soil sampling has not been proposed in the area between AOC 100 and AOC 103 since this was not an area where historic operations were conducted. All proposed soil sampling within AOC 100 and AOC 103 is recommended in locations where potential storage was observed on historic aerials.

  Section 6.3:

  As described above, based on existing groundwater and soil data, additional sampling is necessary to delineate impacts pursuant to NJDEP regulations (TRSR 7:26E-4.1). Specific locations have

been proposed for monitoring wells and soil samples with the understanding that these are optimal locations (based on existing data) to allow for the delineation of impacts and complete the remedial investigation of the specified AOCs. However, the proposed locations may need to be adjusted in the field based on any encountered obstructions or refusal. In addition, data derived from the new groundwater and soil samples may indicate that additional sampling is still necessary to delineate impacts and serve to complete the remedial investigation. If additional sampling is warranted, the LSRP of record will make a determination (based on existing data) of where additional sampling points are needed and analytical data necessary to complete delineation pursuant to NJDEP technical regulations. Implementation of the new scope will move forward immediately without the submittal of additional workplans.

NJDEP Comment 19: AOC 85, AOC 91, AOC 100, AOC 103: These AOCs are south of the North Ditch, are contiguous to overlapping, and are within or proximal to the solar field footprint.

Hess/Earth Systems Response 19: Hess understands this to be a comment only and that no response is required.

a. **AOC 103 Limits:** Based on aerial photo reviews and the results to date from FA-1 through FA-7, AOC 103 limits should be larger than identified in the 2015 SIR. The AOC limits should include all of the apparent fire training pit areas/drainage pathways. It should also include the area between the No. 1 Landfarm and FA- 1/AOC 100 limits that had what may be tanker trucks related to fire training and/or fire response materials storage. Draft Comment Response 4 states that the RIW is focused on specific AOCs. The tanker area is not considered part of one of the solar field AOCs but is partly within the solar field footprint. This area needs to be part of AOC 103 or another AOC needs to be created.

- Please see response above to this comment (Hess/Earth Systems Response 4). As discussed during the August 16, 2021 meeting, Hess/Earth Systems acknowledge that there are containers present in the 1969-1970 aerials, located to the west of the footprint of the Project Area. This area is located outside the boundaries of the area addressed in this RIW and will be addressed in a separate report at a later date.

  Please note that there is no current documentation that identifying the contents, if any, of the observed containers. Hess therefore intends that analytical results for this area will capture all constituents potentially relevant to operations in this area, including PFAS.

b. RIW Well Construction Summary Table: Although the well manual is referenced, the RIR must include a well construction summary table for the subset of the existing wells that will be included in the remedial investigation, and the construction of new wells installed during the investigation, for ease of reference. As previously discussed, all references to prior documents should be included as appendices for ease of reference and review.

- A well construction table is included in Section 2.3, page 6 of the RIW.

Monitoring Well ID	Date Installed	Well Depth	Screened Interval/Groundwater Interval
PER-8	4/08/2002	17 ft	5 – 17 ft (shallow)
FA-1	1/9/2020	13 ft	2 – 13 ft (shallow)
FA-2	1/8/2020	14 ft	2 – 14 ft (shallow)
FA-3	1/8/2020	15 ft	2 – 15 ft (shallow)
FA-4	1/8/2020	15 ft	2 – 15 ft (shallow)
FA-5	1/8/2020	15 ft	2 – 15 ft (shallow)
FA-6	1/10/2020	15 ft	2 – 15 ft (shallow)
FA-7	1/10/2020	15 ft	2 – 15 ft (shallow)

d. **2020 Ground Water Data Discussion – Petroleum Impacts:** RIW Section 5 discussed ground water data. Benzene (FA-3, FA-5), benzo(a)anthracene (FA-3), Total VOC and SVOC TICs (FA-3, FA-5), and limited inorganics exceed Class IIA GWQS. FA-3 and FA-5 are the most impacted (benzene, Total TICs and LNAPL). The section concludes that investigation is needed because of benzene. The RIW includes borings around FA-3 and FA-5 to further evaluate LNAPL and soil EPH impacts, and additional borings in AOC 100 and AOC 91. Additional monitor wells will also be installed. The RIR need to evaluate all COC impacts to ground water. Benzene is not the only petroleum related COC at AOC 100/103.

- The RIW proposes collecting groundwater samples for TCL VOCs, TCL SVOCs, ammonia, metals, and PFAS compounds so that all potential COCs are evaluated (see table from RIW below).

Well ID	Proposed Depth	Analysis	Notes
FA-8	15 ft	VOC, SVOC, Metals, Ammonia, PFAS	Delineation
FA-9	15 ft	VOC, SVOC, Metals, Ammonia, PFAS	Delineation
FA-10	15 ft	VOC, SVOC, Metals, Ammonia, PFAS	Delineation
FA-11	15 ft	VOC, SVOC, Metals, Ammonia, PFAS	Delineation
FA-12	15 ft	VOC, SVOC, Metals, Ammonia, PFAS	Delineation

FA-13	15 ft	VOC, SVOC, Metals, Ammonia, PFAS	Delineation
FA-14	15 ft	VOC, SVOC, Metals, Ammonia, PFAS	Delineation
FA-15	15 ft	VOC, SVOC, Metals, Ammonia, PFAS	Delineation
FA-16	15 ft	VOC, SVOC, Metals, Ammonia, PFAS	Delineation
FA-17	15 ft	VOC, SVOC, Metals, Ammonia, PFAS	Delineation
FA-18	15 ft	VOC, SVOC, Metals, Ammonia, PFAS	Delineation
FA-19	15 ft	VOC, SVOC, Metals, Ammonia, PFAS	Delineation
FA-20	15 ft	VOC, SVOC, Metals, Ammonia, PFAS	Delineation
FA-21	15 ft	VOC, SVOC, Metals, Ammonia, PFAS	Delineation

NJDEP Comment 20 - AOC 85, AOC 91, AOC 100/103: Figure 9 soil boring and monitor well information was provided on multiple aerials as requested. FA-14 is located in the 1963 aerial photo feature, and FA-13 is located within the area in the 1972 aerial photo. FA-15 is located at a feature in the 1979 photo. The wells to be sampled are FA-8 through FA-21 for VOC, SVOC, Metals, Ammonia, PFAS. Included will also be SP-2, SP-3 and BG-3 for PFAS compound sampling.

a. Soil borings locations should be included around FA-3 (EPH, contingent analysis) on Figure 9-aerial photo figures.

- The borings around FA-3 were inadvertently left off the Figure 9-aerial photographs. A revised set of Figure 9 aerial figures has been included with this letter identifying soil boring locations around FA-3.

b. Existing wells FA-1 through FA-7 were sampled for PFAS compounds in January 2020. They have not been sampled again to confirm PFAS results or evaluate changes and are not included in the sampling plan. The Department recommends including FA-1 through FA-7 in the PFAS sampling plan.

- Monitoring wells FA-1 through FA-7 will also be sampled for PFAS as part of the implementation of this RIW.

c. Confirm if the temporary well is still proposed at AOC-115 or if this has been omitted from the RIW.

- AOC 115 is addressed in the Marine Loading Dock RIW. This area is located outside the boundaries of the area addressed in this RIW and will be addressed in a separate report at a later date.

Figure 9 – 1969 photo (attachment 1):

d. The potential fire training tanker area (circled in black) is not included in the RIW. FA-16 is located in part of this area. This area appears to be considered outside of the AOCs included in the RIW. If the potential fire training/material storage tanker area is not part of AOC 103 and this RIW, it will need to be part of another

investigation.

- Please see response above to this comment (Hess/Earth Systems Response 4). As discussed during the August 16, 2021 meeting, Hess/Earth Systems acknowledge that there are containers present in the 1969-1970 aerials, located to the west of the footprint of the Project Area. This area is located outside the boundaries of the area addressed in this RIW and will be addressed in a separate report at a later date.

  Please note that there is no current documentation that supports the conclusion of what the observed containers are storing if anything at all. However, analytical results will capture constituents that would be relevant to the investigation.

e. The locations of FA-8 and FA-20 (circled in black) appear to be outside of the apparent drainage path starting near FA-4 (highlighted in photo). This will have to be considered with the results if the locations are not adjusted.

- The locations will be adjusted to line up exactly with the drainage channel. GPS coordinates will be obtained from the geo-referenced historic aerials to determine the actual field location of the wells.

f. The Colonial Pipeline location will have to be confirmed and shown on RIR well location figures, and the RIR will also need to provide pipeline construction information.

- The location of the Colonial Pipeline will be confirmed during implementation of the proposed RIW activities and illustrated on the RIR figures.

NJDEP Comment 21 - AOC 91 North Dock Yard: Five (5) soil borings are proposed for EPH, TCL/TAL sample analyses. One location will be converted to a temporary well. The location is shown on Figure 9 (1963 – 2006 aerials).

a. Temporary well boring must be advance by hand augers if possible to minimize disruption of the formation and impacts to VO COCs.

- As explained previously, the temporary well boring will be advanced utilizing a hand auger to minimize potential VOC loss.

b. The temporary well location should be finalized based on soil boring log observations.

- Agreed.

NJDEP Comment 22 - Figure 5 Ground Water Contour Map: The ground water elevation change between FA- 2 (7.5' msl) and FA-3 (2.78' msl) is significant. As identified in prior comments, efforts should be made to obtain as detailed boring logs as possible in this transition area to identify changes in the underlying formation with depth.

a. Flow conditions between FA-1 and SP-2/SP-3 are not clear. Proposed wells FA-15, 16 and 17 should provide further resolution.

- As explained previously, a hand auger will be utilized to obtain additional lithology information in AOC 103, in order to better understand the steep groundwater gradient observed in the area.

Should you have any questions or require additional clarification or information, please contact me at 732-739-6444 or via e-mail at ablake@earthsys.net. If you have any questions relating to the project and schedule moving forward, you can also contact Mr. John Schenkewitz of Hess Corporation at 609-406-3969.

Sincerely,

Amy Blake
Sr. Project Manager

c. Ms. Julia Galayda, NJDEP Case Manager (via email/Sharefile)
Mr. John Schenkewitz – Hess Corporation (via e-mail)
Mr. Rick Ofsanko – Earth Systems (via e-mail)
Mr. John Virgie – Earth Systems (via e-mail)